WHAT IS CLAIMED IS:

1. A method for preparation of a gel electrolyte battery in which a battery device is accommodated in an exterior material of a laminated film and sealed therein by heat fusion, said method comprising:

a battery device preparation step of layering a positive electrode and a negative electrode via a gel electrolyte to form said battery device;

an accommodating step of accommodating the battery device from said battery device preparation step in said laminated film; and

a heating step of heating said battery device, accommodated in said laminated film in said accommodating step, under a pressured state.

2. The method for preparation of a gel electrolyte battery according to claim 1 wherein the pressure applied to a battery device in the heating process is in a range from 490 kPa to 2450 kPa.

3. The method for preparation of a gel electrolyte battery according to claim 1 wherein the heating temperature for the battery device in the heating process is in a range from 50°C to 105°C.

4. The method for preparation of a gel electrolyte battery according to claim 1 wherein pressuring and heating are applied via a resin of a heat-resistant rubber to the battery device accommodated in a laminated film exterior material.

5. The method for preparation of a gel electrolyte battery according to claim 4 wherein the heat-resistant rubber is silicon rubber.

6. The method for preparation of a gel electrolyte battery according to claim 1 wherein the exterior material is a laminated film comprised of an Al foil on both sides of which are formed resin layers.

7. The method for preparation of a gel electrolyte battery according to claim 1 wherein, in said battery device preparation step, the gel electrolyte is made up of a matrix polymer, a non-aqueous solvent and an electrolyte salt, and wherein the ratio of the amount of the non-aqueous solvent boiling at a temperature of 110°C or lower under ambient pressure (B) to the total amount of the non-aqueous solvent contained in the gel electrolyte (A) or B/A is set to 1 wt% or less.

8. The method for preparation of a gel electrolyte battery according to claim 1 wherein, in said battery device preparation step, the matrix polymer in a gel electrolyte is at least one material selected from the group of polyacrylonitrile, polyethylene oxides, hexafluoropropylene, tetrafluoroethylene, vinyl acetate, methyl methacrylate, butyl methacrylate, methyl acrylate, butyl acrylate, itaconic acid, hydrogenated methyl acrylate, hydrogenated ethyl acrylate, acrylic amide, vinyl chloride, vinylidene fluoride, vinylidene chloride, acrylonitrile-butadiene rubber, acrylonitrile-butadiene styrene resin, acrylonitrile-polyethylene chloride propylene diene styrenic resin, acrylonitrile-vinyl chloride resin, acrylonitrile-methacrylate resin, acrylonitrile-acrylate resin, polyether modified siloxane and copolymers thereof.

9. The method for preparation of a gel electrolyte battery according to claim 1 wherein, in said battery device preparation step, a polyolefinic micro-porous separator

is arranged, along with the gel electrolyte, between the positive and negative electrodes.

10. The method for preparation of a gel electrolyte battery according to claim 1 wherein, in said battery device preparation step, a strip-like positive electrode and a strip-like negative electrode are layered together via a gel electrolyte and coiled longitudinally to form a battery device.

11. The method for preparation of a gel electrolyte battery according to claim 10 wherein, in said battery device preparation step, a micro-porous separator is arranged between the strip-like positive electrode made up of the positive active material layer and a gel electrolyte layer formed thereon and the strip-like negative electrode made up of the negative active material layer and a gel electrolyte layer formed thereon.

12. The method for preparation of a gel electrolyte battery according to claim 1 wherein, in said battery device preparation step, a strip-like positive electrode made up of the positive active material layer containing a lithium compound oxide and a gel electrolyte layer formed thereon is layered on each surface of a positive electrode collector made up of a metal foil, and a strip-like negative electrode made up of the negative active material layer containing a material capable of doping/undoping lithium and a gel electrolyte layer formed thereon is layered on each surface of a negative electrode collector made up of a metal foil, said strip-like positive electrode and the strip-like negative electrode being layered together and coiled longitudinally to form a battery device.

13. A method for preparation of a gel electrolyte battery in which a battery device is accommodated in an exterior material of a laminated film and sealed therein by heat fusion, said method comprising:

a battery device preparation step of layering a positive electrode and a negative electrode via a gel electrolyte to form said battery device;

an accommodating step of accommodating the battery device from said battery device preparation step in said laminated film;

a charging step of charging the battery device accommodated in said laminated film in said accommodating step;

a discharging step of discharging the battery device following the charging step; and

a heating step of heating said battery device from said discharging step under a pressured state.

14. A method for preparation of a gel electrolyte battery in which a battery device is accommodated in an exterior material of a laminated film and sealed therein by heat fusion, said method comprising:

a battery device preparation step of layering a positive electrode and a negative electrode via a gel electrolyte to form said battery device;

an accommodating step of accommodating the battery device from said battery device preparation step in said laminated film;

a first heating step of heating said battery device, accommodated in said

laminated film in said accommodating step, under a pressured state;

a charging step of charging the battery device following the first heating step;

a discharging step of discharging the battery device from said charging step; and

a second heating step of heating the battery device from said discharging step under a pressured state.

15. The method for preparation of a gel electrolyte battery according to claim 13 wherein, in the heating step for the battery device from said discharging step, the pressure applied to the battery device is set in a range from 490 to 2450 kPa.

16. The method for preparation of a gel electrolyte battery according to claim 13 wherein, in the heating step for the battery device from said discharging step, the temperature of heating the battery device is set in a range from 50°C to 105°C.

17. The method for preparation of a gel electrolyte battery according to claim 13 wherein, in the heating step for the battery device from said discharging step, the pressuring and heating are applied through a resin of heat-resistant rubber to the battery device accommodated in the laminate film exterior material.

18. The method for preparation of a gel electrolyte battery according to claim 17 wherein the heat-resistant rubber is silicon rubber.

19. The method for preparation of a gel electrolyte battery according to claim 13 wherein the exterior material is a laminated film comprised of an Al foil on both sides of which are formed resin layers.

20. The method for preparation of a gel electrolyte battery according to claim 13

wherein, in said battery device preparation step, the gel electrolyte is made up of a matrix polymer, a non-aqueous solvent and an electrolyte salt, and wherein the ratio of the amount of the non-aqueous solvent boiling at a temperature of 110°C or lower under ambient pressure (B) to the total amount of the non-aqueous solvent contained in the gel electrolyte (A) or B/A is set to 1 wt% or less.

21. The method for preparation of a gel electrolyte battery according to claim 13 wherein, in said battery device preparation step, the matrix polymer in a gel electrolyte is at least one material selected from the group of polyacrylonitrile, polyethylene oxides, hexafluoropropylene, tetrafluoroethylene, vinyl acetate, methyl methacrylate, butyl methacrylate, methyl acrylate, butyl acrylate, itaconic acid, hydrogenated methyl acrylate, hydrogenated ethyl acrylate, acrylic amide, vinyl chloride, vinylidene fluoride, vinylidene chloride, acrylonitrile-butadiene rubber, acrylonitrile-butadiene styrene resin, acrylonitrile-polyethylene chloride propylene diene styrenic resin, acrylonitrile-vinyl chloride resin, acrylonitrile-methacrylate resin, acrylonitrile-acrylate resin, polyether modified siloxane and copolymers thereof.

22. The method for preparation of a gel electrolyte battery according to claim 13 wherein, in said battery device preparation step, a polyolefinic micro-porous separator is arranged, along with the gel electrolyte, between the positive and negative electrodes.

23. The method for preparation of a gel electrolyte battery according to claim 13 wherein, in said battery device preparation step, a strip-like positive electrode and a

strip-like negative electrode are layered together via a gel electrolyte and coiled longitudinally to form a battery device.

24. The method for preparation of a gel electrolyte battery according to claim 23 wherein, in said battery device preparation step, a micro-porous separator is arranged between the strip-like positive electrode made up of the positive active material layer and a gel electrolyte layer formed thereon and the strip-like negative electrode made up of the negative active material layer and a gel electrolyte layer formed thereon.

25. The method for preparation of a gel electrolyte battery according to claim 13 wherein, in said battery device preparation step, a strip-like positive electrode made up of the positive active material layer containing a lithium compound oxide and a gel electrolyte layer formed thereon is layered on each surface of a positive electrode collector made up of a metal foil, and a strip-like negative electrode made up of the negative active material layer containing a material capable of doping/undoping lithium and a gel electrolyte layer formed thereon is layered on each surface of a negative electrode collector made up of a metal foil, said strip-like positive electrode and the strip-like negative electrode being layered together and coiled longitudinally to form a battery device.

26. The method for preparation of a gel electrolyte battery according to claim 14 wherein, in the first and second heating steps for the battery device, the pressure applied to the battery device is set in a range from 490 to 2450 kPa.

27. The method for preparation of a gel electrolyte battery according to claim 14

wherein, in the first and second heating steps for the battery device, the temperature of heating the battery device is set in a range from 50°C to 105°C.

28. The method for preparation of a gel electrolyte battery according to claim 14 wherein, in the first and second heating steps for the battery device, the pressuring and heating are applied through a resin of heat-resistant rubber to the battery device accommodated in the laminate film exterior material.

29. The method for preparation of a gel electrolyte battery according to claim 28 wherein the heat-resistant rubber is silicon rubber.

30. The method for preparation of a gel electrolyte battery according to claim 14 wherein the exterior material is a laminated film comprised of an Al foil on both sides of which are formed resin layers.

31. The method for preparation of a gel electrolyte battery according to claim 14 wherein, in said battery device preparation step, the gel electrolyte is made up of a matrix polymer, a non-aqueous solvent and an electrolyte salt, and wherein the ratio of the amount of the non-aqueous solvent boiling at a temperature of 110°C or lower under ambient pressure (B) to the total amount of the non-aqueous solvent contained in the gel electrolyte (A) or B/A is set to 1 wt% or less.

32. The method for preparation of a gel electrolyte battery according to claim 14 wherein, in said battery device preparation step, the matrix polymer in a gel electrolyte is at least one material selected from the group of polyacrylonitrile, polyethylene oxides, hexafluoropropylene, tetrafluoroethylene, vinyl acetate, methyl methacrylate,

butyl methacrylate, methyl acrylate, butyl acrylate, itaconic acid, hydrogenated methyl acrylate, hydrogenated ethyl acrylate, acrylic amide, vinyl chloride, vinylidene fluoride, vinylidene chloride, acrylonitrile-butadiene rubber, acrylonitrile-butadiene styrene resin, acrylonitrile-polyethylene chloride propylene diene styrenic resin, acrylonitrile-vinyl chloride resin, acrylonitrile-methacrylate resin, acrylonitrile-acrylate resin, polyether modified siloxane and copolymers thereof.

33. The method for preparation of a gel electrolyte battery according to claim 14 wherein, in said battery device preparation step, a polyolefinic micro-porous separator is arranged, along with the gel electrolyte, between the positive and negative electrodes.

34. The method for preparation of a gel electrolyte battery according to claim 14 wherein, in said battery device preparation step, a strip-like positive electrode and a strip-like negative electrode are layered together via a gel electrolyte and coiled longitudinally to form a battery device.

35. The method for preparation of a gel electrolyte battery according to claim 34 wherein, in said battery device preparation step, a micro-porous separator is arranged between the strip-like positive electrode made up of the positive active material layer and a gel electrolyte layer formed thereon and the strip-like negative electrode made up of the negative active material layer and a gel electrolyte layer formed thereon.

36. The method for preparation of a gel electrolyte battery according to claim 14 wherein, in said battery device preparation step, a strip-like positive electrode made

up of the positive active material layer containing a lithium compound oxide and a gel electrolyte layer formed thereon is layered on each surface of a positive electrode collector made up of a metal foil, and a strip-like negative electrode made up of the negative active material layer containing a material capable of doping/undoping lithium and a gel electrolyte layer formed thereon is layered on each surface of a negative electrode collector made up of a metal foil, said strip-like positive electrode and the strip-like negative electrode being layered together and coiled longitudinally to form a battery device.